

AMENDMENTS TO THE CLAIMS

This listing of Claims will replace all prior versions, and listings of Claims in the application.

1-298. (Canceled)

299. (New) A method for calibrating an analyte sensor, the method comprising:
receiving sensor data from an analyte sensor, including one or more sensor data points;
receiving reference data, including one or more reference data points;
providing one or more matched data pairs by matching a reference data point to a substantially time corresponding sensor data point;
forming a calibration set including one or more matched data pairs;
forming a conversion function based at least in part on the calibration set;
modifying the conversion function using a modified calibration set including one or more matched data pairs, wherein the modified calibration set is not the same as the calibration set; and
converting the sensor data into calibrated sensor data using the modified conversion function.

300. (New) The method of Claim 299, wherein the modifying the conversion function is responsive to a clinical acceptability analysis.

301. (New) The method of Claim 300, wherein the clinical acceptability analysis comprises using a clinical cost function.

302. (New) The method of Claim 301, wherein the clinical cost function comprises a Clarke Error Grid, a Consensus Grid or a mean absolute relative difference.

303. (New) The method of Claim 299, wherein the modifying the conversion function is responsive to a statistical association of the one or more matched data pairs in the calibration set.

304. (New) The method of Claim 303, wherein the statistical association is determined based on a cost function.

305. (New) The method of claim 303, wherein the statistical association is determined by evaluating a correlation of the one or more matched data pairs of the calibration set with a regression line formed from the one or more matched data pairs of the calibration set.

306. (New) The method of Claim 299, wherein receiving sensor data comprises receiving the sensor data from a continuous glucose sensor.

307. (New) The method of Claim 299, wherein receiving reference data comprises receiving reference data from an in vitro blood glucose monitor.

308. (New) The method of Claim 299, wherein receiving reference data comprises downloading reference data via a wireless connection.

309. (New) The method of Claim 299, wherein receiving reference data from a reference analyte monitor comprises receiving within a receiver an internal communication from a reference analyte monitor integral with the receiver.

310. (New) The method of Claim 299, wherein the calibration set comprises a single matched data pair.

311. (New) The method of Claim 299, wherein the calibration set comprises a plurality of matched data pairs.

312. (New) A computer system for calibrating an analyte sensor, the computer system comprising:

- a sensor data receiving module configured to receive a data stream comprising one or more sensor data points;

- a reference data receiving module configured to receive reference data, including one or more reference data points;

- a data matching module configured to form one or more matched data pairs by matching one or more reference data points to one or more substantially time corresponding sensor data points;

- a calibration set module configured to form a calibration set including the one or more matched data pairs;

- a conversion module configured to form a conversion function based at least in part on the calibration set, wherein the conversion function module is further configured to modify the conversion function using a modified calibration set including one or more

matched data pairs, wherein the modified calibration set is not the same as the calibration set; and

a sensor transformation module configured to convert the sensor data into calibrated sensor data using the modified conversion function.

313. (New) The computer system of Claim 312, wherein the conversion module is configured to modify the conversion function responsive to a clinical acceptability analysis.

314. (New) The computer system of Claim 313, wherein the clinical acceptability analysis comprises using a clinical cost function.

315. (New) The computer system of Claim 314, wherein the clinical cost function comprises a Clarke Error Grid, a Consensus Grid or a mean absolute relative difference.

316. (New) The computer system of Claim 312, wherein the conversion module is configured to modify the conversion function responsive to a statistical association of the one or more matched data pairs in the calibration set.

317. (New) The computer system of Claim 316, wherein the statistical association is determined based on a cost function.

318. (New) The computer system of claim 316, wherein the statistical association is determined by evaluating a correlation of the one or more matched data pairs of the calibration set with a regression line formed from the one or more matched data pairs of the calibration set.

319. (New) The computer system of Claim 312, wherein the sensor data is continuous glucose sensor.

320. (New) The computer system of Claim 312, wherein system is physically connected to a reference glucose monitor.

321. (New) The computer system of Claim 312, wherein the calibration set comprises a single matched data pair.

322. (New) The computer system of Claim 312, wherein the calibration set comprises a plurality of matched data pairs.